

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>P53PC032</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/011913</b>	International filing date ( <i>day/month/year</i> ) <b>21.10.2004</b>	Priority date ( <i>day/month/year</i> ) <b>21.10.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>F16K1/30, F16K31/40</b>		
Applicant <b>PERTHEL, Klaus</b>		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>10</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input checked="" type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-17 as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. 1-20 as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets 1/6-6/6 as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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**Box No. III** Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 19, 20

because:

☐ the said international application, or the said claims Nos. \_\_\_\_\_  
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_\_  
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported  
by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 19, 20

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. IV

Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees the applicant has:
- ☐ restricted the claims.
  - ☐ paid additional fees.
  - ☐ paid additional fees under protest.
  - ☒ neither restricted the claims nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with.
  - ☒ not complied with for the following reasons:

**See Supplemental Box.**

4. Consequently, this report has been established in respect of the following parts of the international application:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-18

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>1-18</u>	YES
		Claims _____	NO
	Inventive step (IS)	Claims <u>10-18</u>	YES
		Claims <u>1-9</u>	NO
	Industrial applicability (IA)	Claims <u>1-18</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
1.	Reference is made to the following documents:		
	D1: US-A-5 458 151 (WASS LLOYD G) 17 October 1995 (1995-10-17)		
	D2: US 2003/075700 A1 (GREEN CHRISTOPHER ET AL) 24 April 2003 (2003-04-24).		
2.	The present application fails to satisfy the requirements of PCT Article 33(1) because the subject matter of claims 1 to 7 does not involve an inventive step (PCT Article 33(3)).		
2.1	Document D1 is considered to be the prior art closest to the subject matter of claim 1. Said document (the references in parentheses are to document D1) discloses:		
2.1.1	an electromagnetic valve for a gas cylinder (10), in particular for a gas cylinder (10) for gas-powered motor vehicles, said cylinder comprising:		
	a valve body (16);		
	a threaded portion of the valve body with a male thread that can be screwed into a female thread on the gas cylinder (10);		

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>a portion of the valve body (16) projecting into the gas cylinder (10);</p> <p>a shut-off piston (100);</p> <p>electromagnetic control elements (94), with which the shut-off piston (100) can be moved from a throughflow position to a closed position, said valve body (16) having a cavity (60) to receive the shut-off piston (100) and the electromagnetic control elements (94), said cavity (60) being inside the threaded portion and/or inside the portion of the gas cylinder (10) that projects into the valve body (16).</p> <p>2.1.2 Thus, the subject matter of claim 1 differs from the known electromagnetic valve in that:</p> <p>the cavity (15) has a port at the top end (5) of the valve body (4) outside the gas cylinder (1) and the shut-off valve (31) and the electromagnetic control elements (25, 28, 29) can be introduced into the cavity (15).</p> <p>2.1.3 The problem addressed by the present invention can consequently be regarded as the following:</p> <p>maintenance and cleaning of the valve can be carried out only by removing the valve body from the gas cylinder (as per D1) (see description, page 2, final paragraph).</p> <p style="text-align: right;">/...</p>

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>2.1.4 The solution to the above problem, as proposed in claim 1 of the present application, cannot be considered inventive (PCT Article 33(3)). The reasons are as follows:</p> <p>said features have already been used for the same purpose in a similar electromagnetic valve (see document D2, in particular page 2, paragraphs 25-31). If a person skilled in the art wishes to achieve the same aim in an electromagnetic valve as per document D1, he can easily apply these features to like effect to the subject matter of document D1. In this way he would arrive at an electromagnetic valve as per claim 1 without thereby being inventive.</p> <p>According to D2, which describes a pilot-operated valve, the electromagnetic pilot valve can be introduced into a cavity with a port on the top end of the valve body outside the gas cylinder.</p> <p>For a person skilled in the art, it is obvious to mount a directly controlled main valve in the cavity, instead of a pilot valve.</p> <p>3. Dependent claims 2-9 contain no features which, combined with the features of any claim to which they refer, meet the PCT requirements for novelty and/or inventive step (see documents D1 and D2, and the appropriate passages cited in the search report).</p> <p style="text-align: right;">/...</p>

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

3.1 The combination of features in dependent claims 10-18 is not known from the available prior art, nor is it rendered obvious thereby.

The reasons are as follows:

none of the documents cited in the search report discloses said feature and, for a person skilled in the art, the use thereof in the electromagnetic valve as per document D1 is non-obvious.



## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

**Box IV: Lack of unity of invention**

The different inventions are:

Claims 1-18:

an electromagnetic valve with a cavity port through which a shut-off piston and the electromagnetic control elements can be introduced (from outside).

Claims 19-20:

an electromagnetic valve, the shut-off piston being freely displaceable within the valve body.

For the following reasons, these inventions are not so linked as to form a single general inventive concept (PCT Rule 13.1):

EP 1 327 809 is considered to be the closest prior art in accordance with the preamble of claim 1 and the preamble of claim 19.

The two special technical features (elements can be introduced into the cavity and freely displaceable shut-off piston) are not the same.

The former feature facilitates the maintenance and cleaning of the valve (see the description, page 2, final paragraph).

/...

## Supplemental Box

The second feature concerns the reduction of noise when the gas cylinder is being filled. Safe opening and closing is achieved without main closing springs (see description page 7, final paragraph to page 8, paragraph 3). The two features, likewise, do not correspond.

Thus, the two aforementioned groups of claims are not linked by unity of invention in respect of either the special technical features or the problems addressed (PCT Rule 13.1 and 13.2).